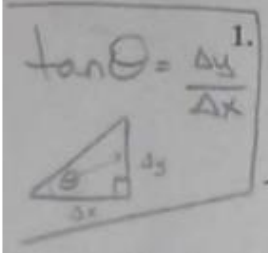
Name: _____ Date: _____

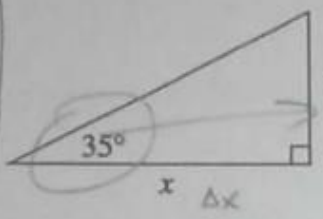
GEOMETRY – CHAPTER 4 QUIZ *Review*

PART 1: SLOPE RATIOS. Use tangent to find the value of the variable in each picture. SHOW YOUR WORK. Round your final answer to the nearest hundredth (2 pts. each).

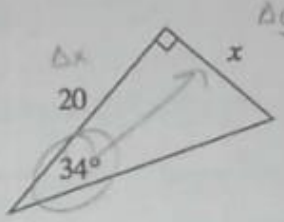
1. $\tan\theta = \frac{\Delta y}{\Delta x}$

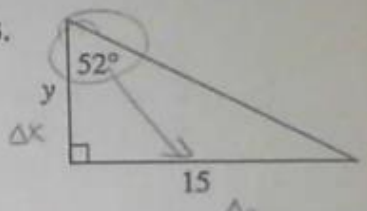


2.



3.





$\tan 35° = \frac{7}{x}$

$\frac{7}{\tan 35} = x \cdot \frac{\tan 35}{\tan 35}$

$9.997 \approx x$

$\tan 34° = \frac{x}{20}$

$x = 20 \cdot \tan 34°$

$x \approx 13.49$

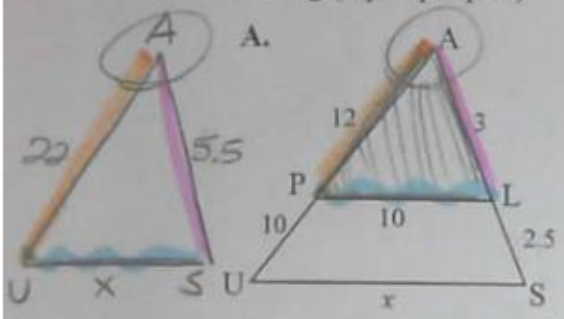
$\tan 52° = \frac{15}{y}$

$\frac{15}{\tan 52} = y \cdot \frac{\tan 52}{\tan 52}$

PART 2: REVIEW. Answer each of the following review problems.

4. For each pair of triangles below, determine if the triangles are similar. If they are similar, state why and solve for x. If not, or there is not enough information, describe why not or what information is missing (3 pts. per part)

A.



Why are these triangles similar?

$\frac{12}{22} = \frac{3}{5.5}$ ✓ SAS~

Solve for x.

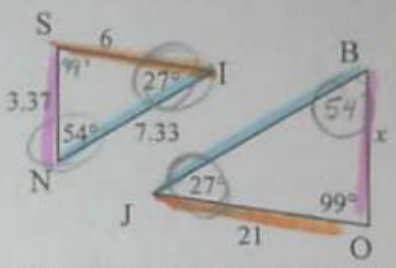
$\frac{UA}{PA} = \frac{US}{PL}$

$\frac{22}{12} = \frac{x}{10}$

$12x = 220$

$x = 18.\overline{3}$

B.



Why are these triangles similar?

AA~

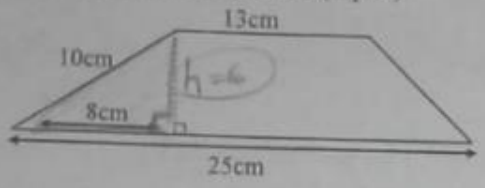
Solve for x.

$\frac{3.37}{x} = \frac{6}{21}$

$6x = 70.77$

$x \approx 11.80$

5. Find the area of the trapezoid (4 pts.).



Step1: Find h

$8^2 + h^2 = 10^2$

$64 + h^2 = 100$

$\sqrt{h^2} = \sqrt{36}$

$h = 6$

Step2: Area of trapezoid

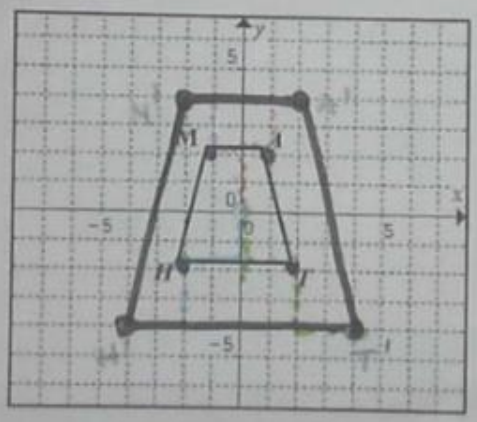
$A = \frac{1}{2}(b_1 + b_2)h$

$= \frac{1}{2}(13+25)6$

$= \frac{1}{2} \cdot 38 \cdot 6$

$= 114\ cm^2$

6. Dilate MATH with a zoom factor of 2 about the origin. Be sure to label your new image correctly! (2 pts.)



Carry out the slope triangles 2 times (zoom 2) from the dilation point (origin; (0,0))

7. Show your work (2 pts. each).

A. Calculate the value of x.

$3x - 7 = 2x + 18$

$x = 25$

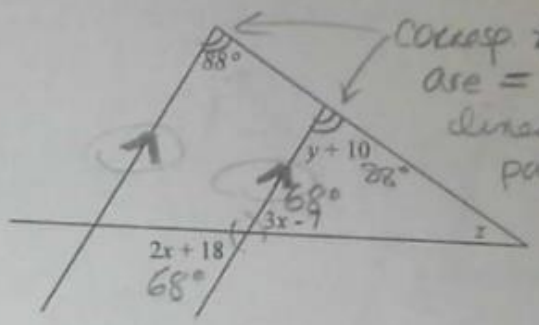
* Vertical ∠s are always =

B. Calculate the value of y.

$88 = y + 10$

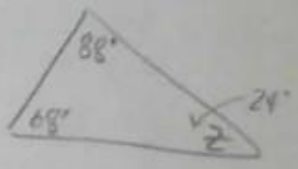
$78 = y$

* corresponding ∠s are = when lines are parallel



corresp ∠s are = when lines are parallel

C. Calculate the value of z.



$88° + 68° + z° = 180°$

$156 + z = 180$

$z = 24°$

* triangle ∠ sum theorem